

REMARKS

Claims 1, 3, 7-15, and 17, 21-32 remain pending in the application. Claims 2, 4-6, 16, and 18-20 have been canceled without prejudice or disclaimer. Claims 1, 7-8, 10, 17, 21, 22, 24, and 32 have been amended without introduction of new matter. Favorable reconsideration is respectfully requested in view of the above amendments and the following remarks.

Claims 1-4, 16-18, and 29-32 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Lundby et al. (US 2002/0110088, hereinafter “Lundby”). This rejection is respectfully traversed.

The rejection of claims 2, 4, 16, and 18 has been rendered moot by the cancellation of these claims without prejudice or disclaimer.

Independent claim 1 has been amended, without introduction of new matter, to define:

A method for providing link adaptation in a wireless communication system, comprising the steps of:

obtaining [[in]] a current link quality measure of a communication link between a transmitting unit and a receiving unit;

determining a Signal-to-Interference Ratio (SIR) value of the communication link by

measuring the SIR value of a pilot channel;

reporting the SIR value to the transmitting unit;

receiving a report from the transmitting unit for each transmitting interval following a first link quality report of a transmission session over the pilot channel; and

determining a discrepancy value for each transmission interval, the discrepancy value being a discrepancy between the reported SIR and a conversion function from transmission parameter to SIR based on the transmission parameter for the transmission interval; and

correcting the current link quality measure based on the determined value by correcting a measured SIR value with the discrepancy value for the transmission interval.

The word “in” has been deleted from the phrase “obtaining in a current link ...” to increase clarity.

The expression “communication link” has been clarified to be “between a transmitting unit and a receiving unit”. This is supported on page 8, lines 28-30.

The step of determining a SIR value has been further clarified by the addition of sub-steps:

- “measuring the SIR value of a pilot channel”, supported in the specification at, for example, page 14, lines 8-10;
- “reporting the SIR value to the transmitting unit”, supported in the specification at, for example, page 14, lines 10-12;
- “receiving a report from the transmitting unit for each transmitting interval following a first link quality report of a transmission session over the pilot channel”, supported in the specification at, for example, page 14, lines 12-16; and
- “determining a discrepancy value for each transmission interval, the discrepancy value being a discrepancy between the reported SIR and a conversion function from transmission parameter to SIR based on the transmission parameter for the transmission interval”, supported in the specification at, for example, page 14, lines 24-28.

Also, the step of “correcting the link quality measure ...” has been further clarified by the addition of “by correcting a measured SIR value with the discrepancy for the transmission interval”. This is supported in the specification at, for example, page 18, lines 5-11.

Independent claim 32 has been similarly amended.

Independent claim 17 has been amended, without introduction of new matter, to define:

An electronic communication apparatus for supporting link adaptation of a communication link, comprising:

- a receiver;
- a transmitter unit;
- a memory;
- a measurement unit for determining a current link quality measure of a communication link;

a controller; and
a correction unit adapted to determine a SIR value of the communication link from a measured SIR value of a pilot channel that is a reported value to the transmitting unit and a report from the transmitting unit for each transmitting interval following a first link quality report of a transmission session over the pilot channel from which a discrepancy value is determined for each transmission interval, the discrepancy value being a discrepancy between the reported SIR and a conversion function from transmission parameter to SIR based on the transmission parameter for the transmission interval, and to correct the current link quality measure based on the determined value with the discrepancy value for the transmission interval.

The phrase “adapted to determine a SIR value of the communication link” has been further defined by “from a measured SIR value of a pilot channel that is a reported value to the transmitting unit and a report from the transmitting unit for each transmitting interval following a first link quality report of a transmission session over the pilot channel from which a discrepancy value is determined for each transmission interval, the discrepancy value being a discrepancy between the reported SIR and a conversion function from transmission parameter to SIR based on the transmission parameter for the transmission interval”. This is supported in the specification at, for example, page 8, lines 28-30, and page 14, lines 8-28. Further, the phrase “to correct the current link quality measure based on the determined value” has been further clarified by “with the discrepancy value for the transmission interval”. This is supported in the specification at, for example, page 18, lines 5-11.

Lundby discloses a link adaptation system, which iteratively measures link quality of a communication link. Lundby further discloses a differential analyzer for determining changes in the measured link quality. However, Lundby fails to disclose the claimed invention, considered as a whole. More particularly, the invention according to claim 1 differs from what is disclosed in Lundby at least in that Lundby fails to disclose or suggest any of the following:

- the SIR value is measured on the pilot channel;
- the SIR value is reported to the transmitting unit;

- a report is received from the transmitting unit for each transmitting interval following a first link quality report of a transmission session over the pilot channel;
- a discrepancy value for each transmission interval is determined;
- the discrepancy value is a discrepancy between the reported SIR and a conversion function from transmission parameter to SIR based on the transmission parameter for the transmission interval; and
- the measured SIR value is corrected with the discrepancy value for the transmission interval.

For at least these reasons, the subject matter defined by independent claim 1 is novel and nonobvious over that which is disclosed by Lundby.

Each of independent claims 17 and 32 defines features that are comparable to those found in claim 1, and is therefore patentably distinguishable over the Lundby document for at least the same reasons as those set forth above.

Although not applied in this ground of rejection, it is worth also observing that the secondary references cited by the Office Action in support of other grounds of rejection (i.e., Walton et al. (US 6,751,187 - hereinafter “Walton”), 3GPP TR 25.858 V1.0 (2001-09), (hereinafter “TR 25.858”) and Oestreich (US 2003/0003875 -- hereinafter “Oestreich”) are not considered to provide any teachings beyond Lundby in this context. More particularly, the person of ordinary skill in the art would find no teaching or suggestion to enhance the signal quality measure according to the novel features of the independent claims in the disclosures of Lundby, Walton, TR 25.858 or Oestreich, regardless of whether these documents are considered individually or in combination. Lundby relies on uncorrected measures, which are communicated by telling the difference from the previous measurement to save bandwidth. The person of ordinary skill in the art might consider higher accuracy in measuring carrier power and/or interference power, or assigning larger bandwidth to the reported difference from previous measure.

By contrast, the enhanced signal quality measure according to the presently claimed embodiments is achieved because the discrepancy between an “expected” SIR based on a used transmission parameter and the measured SIR is considered and corrected for. Thus, the claimed invention cannot be considered obvious to the person of ordinary skill in the art in view of Lundby.

Walton describes a selection of channels for transmission based on SNR, which gives no teaching of how to enhance signal quality measurement.

The TR 25.858 document describes system requirements but gives no indication of how to enhance signal quality measurement.

Oestreich relates to transmission power control, wherein the SIR is used in a faster inner control loop, while BER is used in an outer control loop. A target value for SIR is calculated based on target BER and actual BER, and the target SIR is used for control in the inner loop. No suggestions on enhanced signal quality measure are provided.

For at least the foregoing reasons, the subject matter defined by independent claims 1, 17, and 32, as well as that defined by the remaining dependent claims 3 and 29-31, is believed to be patentably distinguishable over the prior art of record. Accordingly, it is respectfully requested that the rejection of these claims under 35 U.S.C. §102(e) be withdrawn.

Claims 5 and 19 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Lundby in view of Walton et al. (US 6,751,187). This rejection is respectfully traversed.

The rejection of claims 5 and 19 has been rendered moot by the cancellation of these claims without prejudice or disclaimer. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claims 6-8, 10, 11, 14, 15, 20-22, 24, 25, 27, and 28 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Lundby in view of 3GPP TR 25.858 V1.0 (2001-09), hereinafter “TR 25.858.” This rejection is respectfully traversed.

The rejection of claims 6 and 20 has been rendered moot by the cancellation of these claims without prejudice or disclaimer.

Claim 7 has been amended to depend from claim 1, and claim 21 has been amended to depend from claim 17 to accommodate the cancellation of claims 6 and 20. Claims 8, 10, 22, and 24 have been amended to change “a discrepancy” to “the discrepancy” to avoid indefiniteness.

Claims 7-8, 10, 11, 14, 15, 21-22, 24, 25, 27, and 28 variously depend from independent claims 1 and 17, and are therefore patentably distinguishable over any combination of Lundby and TR 25.858 for at least the same reasons as those set forth above with respect to the base claims. Accordingly, it is respectfully requested that the rejection of claims 7-8, 10, 11, 14, 15, 21-22, 24, 25, 27, and 28 be withdrawn.

Claims 9, 12, and 13 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Lundby in view of TR 25.858, and further in view of Oestreich (US 2003/0003875). This rejection is respectfully traversed.

It appears from the Office's remarks that claims 23 and 26 were intended to have been included in this ground of rejection. Applicant therefore takes this into consideration in the following remarks.

Claims 9, 12, 13, 23, and 26 variously depend from independent claims 1 and 17, and are therefore patentably distinguishable over any combination of Lundby, TR 25.858, and Oestreich for at least the same reasons as those set forth above with respect to the base claims. Accordingly, it is respectfully requested that the rejection of claims 9, 12, 13, 23, and 26 be withdrawn.

The application is believed to be in condition for allowance. Prompt notice of same is respectfully requested.

Respectfully submitted,
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